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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/980,130      | 11/28/2001  | Tetsujiro Kondo      | 450106-03095        | 8078             |

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| EXAMINER |
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KIM, CHONG R

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| ART UNIT | PAPER NUMBER |
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2623

DATE MAILED: 11/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                              |  |
|------------------------------|-------------------------------|------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>09/980,130 | Applicant(s)<br>KONDO ET AL. |  |
|                              | Examiner<br>Charles Kim       | Art Unit<br>2623             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,5-10 and 14-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 is/are allowed.
- 6) ☒ Claim(s) 1,5-10,15-22 and 24 is/are rejected.
- 7) ☒ Claim(s) 14 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment and Arguments*

1. Applicant's amendment filed on August 25, 2005 has been entered and made of record.
2. In view of applicant's amendment, the objection to the title is withdrawn.
3. The indicated allowability of claims 2-5 from the previous office action is withdrawn in view of a closer evaluation of the Kondo reference. The rejection based on a new interpretation of Kondo follows.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5-7, 9, 16-19, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kondo et al., Japanese Patent Publication No. 10-056622 ("Kondo").

Referring to claim 1, Kondo discloses an information processing apparatus comprising:

- a. a plurality of classifying adaptive processing circuits (44, 46, 48) for performing a classifying adaptive process for an input information signal (paragraphs 53-54 and figure 7); and
- b. a switching circuit (42) for switching a connection relation among the plurality of classifying adaptive processing circuits (paragraphs 53-54 and figure 7),

c. wherein at least one of the classifying adaptive processing circuits is configured for switching the corresponding classifying adaptive process for the corresponding information signal as the connection relation of the switching circuit is switched (paragraphs 53-54 and figure 7).

Kondo explains that each classifying adaptive processing circuit performs a corresponding classifying adaptive process and outputs signals d25, d26, d27 respectively for an input information signal (41) [paragraph 54]. For explanation purposes, we will consider the first classifying adaptive process to be performed by (44), the second classifying adaptive process by (46), and the third by (48). Kondo also explains that the selection section (49) selects one of the output signals d25, d26, d27 based on a control signal (paragraph 54). Thus, the classifying adaptive process is switched as the connection relation of the switching circuit is switched. For example, if signal d25 is initially selected in the selection section (49) and the connection relation is switched so that signal d26 is selected next, then the classifying adaptive process would be switched from the first classifying adaptive process (performed by 44) to the second classifying adaptive process (performed by 46). Accordingly, the classifying adaptive processing circuit (46) is configured for switching the corresponding classifying adaptive process for the corresponding information signal as the connection relation of the switching circuit is switched.

Referring to claim 5, see the rejection of at least claim 1 above. Kondo further discloses that at least one of the plurality of classifying adaptive processing circuits is configured for switching a coefficient of the corresponding classifying adaptive process so as to switch the

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process for the corresponding information signal as the connection relation is switched by the switching circuit (paragraphs 23-24).

Referring to claim 6, Kondo further discloses that the input information signals are output through the plurality of classifying adaptive processing circuits (figure 7).

Referring to claim 7, Kondo further discloses a pre-processing circuit (43, 45, 47) for performing a predetermined process for the input information signal and switching the predetermined process as the connection relation is switched, wherein an output of the pre-processing circuit is input to the corresponding one of the plurality of classifying adaptive processing circuits (paragraphs 53-54 and figure 7).

Referring to claim 9, Kondo further discloses that the information signals are picture data composed of pixel information, and wherein one of the plurality of classifying adaptive processing circuits is configured for performing the classifying adaptive process based on the pixel information of the corresponding input information signal and predicting pixel information that has to be present between the pixel information of the input information signal and pixel information adjacent thereto so as to improve the resolution of the picture data (paragraphs 23-24 and paragraphs 52-54).

Referring to claim 16, Kondo discloses an information processing apparatus comprising:

- a. a plurality of classifying adaptive processing circuits (44, 46, 48) for performing a classifying adaptive process for an input information signal (paragraphs 53-54 and figure 7); and
- b. a switching circuit (42) for switching a connection relation among the plurality of classifying adaptive processing circuits (paragraphs 53-54 and figure 7),

c. wherein at least one of the classifying adaptive processing circuits is configured for switching the structure of the corresponding classifying adaptive process for the corresponding information signal as the connection relation of the switching circuit is switched (paragraphs 53-54 and figure 7).

Kondo explains that each classifying adaptive processing circuit performs a corresponding classifying adaptive process and outputs signals d25, d26, d27 respectively for an input information signal (41) [paragraph 54]. For explanation purposes, we will consider the first classifying adaptive process to be performed by (44), the second classifying adaptive process by (46), and the third by (48). Note that each classifying adaptive process has a corresponding structure (paragraph 23-24). Kondo also explains that the selection section (49) selects one of the output signals d25, d26, d27 based on a control signal (paragraph 54). Thus, the structure of the classifying adaptive process is switched as the connection relation of the switching circuit is switched. For example, if signal d25 is initially selected in the selection section (49) and the connection relation is switched so that signal d26 is selected next, then the structure of the classifying adaptive process would be switched from the first classifying adaptive process (performed by 44) to the structure of the second classifying adaptive process (performed by 46). Accordingly, the classifying adaptive processing circuit (46) is configured for switching the structure of the corresponding classifying adaptive process for the corresponding information signal as the connection relation of the switching circuit is switched.

Referring to claim 17, Kondo further discloses that the structure represents a structure of class taps or a structure of predictive taps (paragraph 23-24).

Referring to claim 18, see the rejection of at least claim 6 above.

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Referring to claim 19, see the rejection of at least claim 7 above.

Referring to claim 21, see the rejection of at least claim 9 above.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kondo et al., Japanese Patent Publication No. 10-056622 ("Kondo") and Taubman, U.S. Patent No. 6,122,017 ("Taubman").

Referring to claim 8, Kondo does not explicitly disclose a post-processing circuit for performing a predetermined process for the corresponding input information signal and switching the predetermined process as the connection relation is switched.

Taubman discloses a post-processing circuit for performing a predetermined process for an input information signal [abstract. Note that the post-processing is performed immediately after the image interpolation process, see figure 11].

Kondo and Taubman are combinable because they are both concerned with image interpolation systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the imaging system of Kondo to include the post-processing circuit of Taubman. The suggestion/motivation for doing so would have been to further enhance

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the interpolated image (Taubman, abstract). Therefore, it would have been obvious to combine Kondo with Taubman to obtain the invention as specified in claim 8. Note that the combination of Kondo and Taubman disclose an imaging system that comprises a post-processing circuit (of Taubman) connected to each of the outputs of the classifying adaptive processing circuits (of Kondo), since the post-processing is performed immediately after the interpolation process, as noted above. Furthermore, Kondo explains that the switching circuit selects the output of one of the classifying adaptive process circuits (paragraphs 53-54 and figure 7), thereby selecting one of the post-processing circuits connected thereto. Accordingly, the predetermined process performed by the post-processing circuit is switched as the connection relation is switched by the switching circuit.

Referring to claim 20, see the rejection of at least claim 8 above.

6. Claims 10 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kondo et al., Japanese Patent Publication No. 10-056622 ("Kondo") and Nakaya et al., Japanese Patent Publication No. 09-055962 ("Nakaya").

Referring to claim 10, Kondo further discloses that the information signals are picture data composed of pixel information (paragraph 2), but does not explicitly disclose that one of the plurality of classifying adaptive process circuits is configured for performing the classifying adaptive process for the corresponding input information signal using a prepared left eye and right eye coefficient and predicting pixel information of left-eye and right-eye picture data. However, these features were exceedingly well known in the art. For example, Nakaya discloses a classifying adaptive process circuit that is configured for performing a classifying adaptive



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process for an input information signal using a prepared left eye coefficient and predicting pixel information of left-eye picture data and for performing a classifying adaptive process for the input information signal using a prepared right-eye coefficient and predicting pixel information of right-eye picture data so as to generate stereo picture data with the left-eye picture data and the right-eye picture data (paragraphs 14-18 and figure 1).

Kondo and Nakaya are combinable because they are both concerned with adaptive classification image processing systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the classifying adaptive process circuit of Kondo in view of Nakaya. The suggestion/motivation for doing so would have been to enhance the flexibility of the imaging system. Therefore, it would have been obvious to combine Kondo with Nakaya to obtain the invention as specified in claim 10.

Referring to claim 22, see the rejection of at least claim 10 above.

7. Claims 15 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kondo et al., Japanese Patent Publication No. 10-056622 ("Kondo") and Wang et al., U.S. Patent No. 6,625,333 ("Wang").

Referring to claim 15, Kondo further discloses that the information signals are picture data composed of pixel information (paragraph 2), but does not explicitly disclose that one of the classifying adaptive processing circuits is configured to generate picture data of frames chronologically preceded and followed by a frame of the input information signal. However, this feature was exceedingly well known in the art. For example, Wang discloses an image

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processing circuit for generating picture data of frames chronologically preceded and followed by an image frame of an input information signal (col. 2, line 39-col. 3, line 54).

Kondo and Wang are combinable because they are both concerned with adaptive interpolation image processing systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the classifying adaptive process circuit of Kondo so that it generates picture data of frames chronologically preceded and followed by a frame of the input information signal, as taught by Wang. The suggestion/motivation for doing so would have been to enhance the flexibility of the interpolation process. Therefore, it would have been obvious to combine Kondo with Wang to obtain the invention as specified in claim 15.

Referring to claim 24, see the rejection of at least claim 15 above.

#### ***Allowable Subject Matter***

8. Claim 25 is allowed.
9. Claims 14 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 571-272-7421. The

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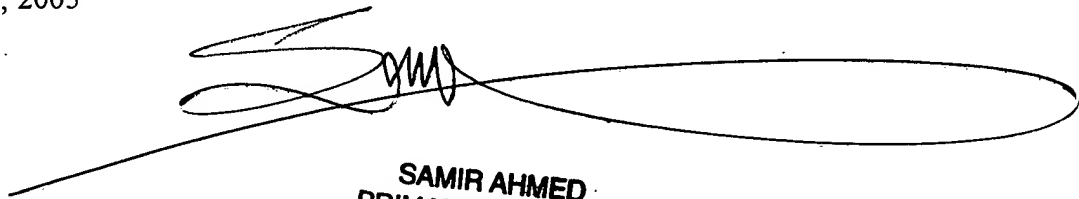
examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri 9:30am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ck

November 16, 2005

A large, stylized handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right.

**SAMIR AHMED  
PRIMARY EXAMINER**